

5  
44. The method of claim 40 wherein the step of pulsing the pulsed laser system comprises micromachining a semiconductor circuit on a silicon substrate.

Al Sub 82  
cont  
45. The method of claim 40 wherein the electronic device is a thick-film electrical element.

46. The method of claim 40 wherein the electronic device is a thin-film electrical element.

47. The method of claim 40 wherein the electronic device is a resistor.

48. The method of claim 40 wherein the electronic device is a capacitor.

49. The method of claim 40 wherein the electronic device is a conductive link.

11  
50. The method of claim 40 wherein the step of presetting the pre-selected pulse shape is performed by computer control.

12  
51. The method of claim 40 wherein the pre-selected repetition rate is selected by computer control.

Sub B3  
52. The method of claim 40 wherein the laser source comprises a laser pump and a laser rod, and the pulsed laser system comprises a switch that, when closed, causes energy from the laser pump to be stored in the laser and that, when opened, allows energy to be emitted from the laser rod during an emission period.

14  
53. The method of claim 52 wherein:  
the pulsed laser system further comprises a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod, and an output reflector through which energy is emitted from the laser rod; and

the switch is interposed between the laser rod and the output reflector.

15  
54. The method of claim ~~40~~<sup>1</sup> wherein the step of pulsing the pulsed laser system comprises preventing a secondary laser emission from impinging on the workpiece after allowing a primary pulse to impinge on the workpiece.

Sub B4  
55. A method of operating a pulsed laser system comprising:  
providing a pulsed laser system comprising a laser source;  
presetting a pre-selected repetition rate at which the pulsed laser system is to be operated, based on known properties of a target material to be processed on a workpiece; and  
pulsing the pulsed laser system with a pre-selected pulse shape selected independently of the pre-selected repetition rate, to cause the laser source to process the target material on the workpiece, while the pre-selected repetition rate remains as preset regardless of the pulse shape.

56. The method of claim 55 wherein the pre-selected pulse width is a pre-selected pulse width.

23+8 21  
57. The method of claim ~~56~~<sup>15</sup> wherein the pre-selected pulse shape is a pre-selected pulse energy.

24+9 21  
58. The method of claim ~~56~~<sup>15</sup> wherein the pre-selected pulse shape is a pre-selected peak pulse power.

25-20 21  
59. The method of claim ~~56~~<sup>15</sup> wherein the step of operating the pulsed laser system comprises micromachining a semiconductor circuit on a silicon substrate.

Sub B5  
60. The method of claim 55 wherein the electronic device is a thick-film electrical element.

61. The method of claim 55 wherein the electronic device is a thin-film electrical element.

62. The method of claim 55 wherein the electronic device is a resistor.

63. The method of claim 55 wherein the electronic device is a capacitor.

64. The method of claim 55 wherein the electronic device is a conductive link.

65. The method of claim 55 wherein the step of presetting the pre-selected pulse shape is performed by computer control.

66. The method of claim 55 wherein the pre-selected repetition rate is selected by computer control.

67. The method of claim 55 wherein the laser source comprises a laser pump and a laser rod, and the pulsed laser system comprises a switch that, when closed, causes energy from the laser pump to be stored in the laser and that, when opened, allows energy to be emitted from the laser rod during an emission period.

68. The method of claim 67 wherein:

the pulsed laser system further comprises a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod, and an output reflector through which energy is emitted from the laser rod; and

the switch is interposed between the laser rod and the output reflector.

69. The method of claim 55 wherein the step of operating the pulsed laser system comprises preventing a secondary laser emission from impinging on a workpiece after allowing a primary pulse to impinge on the workpiece.--